

CLAIMS

What is Claimed is:

1           1.       An apparatus for providing power from a first circuit board having a first  
2 circuit board first conductive surface and a first circuit board second conductive surface  
3 to a second circuit board having a second circuit board first conductive surface and a  
4 second circuit board second conductive surface, comprising:  
5           a first conductive member, including a first end having a first conductive member  
6 first surface electrically coupleable to the first circuit board first conductive surface and a  
7 second end distal from the first end having a first conductive member second surface  
8 electrically coupleable to the second circuit board first surface; and  
9           a second conductive member, having a second conductive member first surface  
10 electrically coupleable to the first circuit board second surface and a second conductive  
11 member second surface distal from the second conductive member first surface  
12 electrically coupleable to the second circuit board second conductive surface.

1           2.       The apparatus of claim 1, wherein the first conductive member is a  
2 different length than the second conductive member

1           3.       The apparatus of claim 1, wherein the second conductive member is  
2 hollow and the first conductive member is disposed within the second conductive  
3 member.

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1           4.     The apparatus of claim 2, wherein the first conductive member and the  
2 second conductive member have matching cross sectional shapes selected from group  
3 comprising:

4           circular;  
5           linear;  
6           ovoid; and  
7           rectangular.

1           5.     The apparatus of claim 2, wherein the first conductive member and the  
2 second conductive member are coaxial.

1           6.     The apparatus of claim 5, further comprising a dielectric disposed between  
2 the first conductive member and the second conductive member.

1           7.     The apparatus of claim 1, wherein:  
2           the first conductive member is rigid mechanical standoff member mechanically  
3 coupling the first circuit board and the second circuit board, and is disposable between the  
4 first circuit board first conductive surface and the second circuit board first conductive  
5 surface such that the first circuit board and the second circuit board are separated by a  
6 standoff distance.

1           8.     The apparatus of claim 1, wherein:  
2           the second conductive member is rigid and disposable between the first circuit  
3 board second conductive surface and the second circuit board second conductive surface.

1           9.     The apparatus of claim 1, wherein:

2           the first circuit board first conductive surface is electrically coupled to a power  
3     signal of the first circuit board;

4           the first circuit board second conductive surface is electrically coupled to a ground  
5     return of the power signal;

6           the second circuit board first conductive surface is electrically coupled to a  
7     component of the second circuit board; and

8           the second circuit board conductive surface is electrically coupled to the ground  
9     return of the power signal.

1           10.    The apparatus of claim 1, further comprising:

2           a compressible conductive member, disposed between the second circuit board first  
3     surface and the second conductive member second surface.

1           11.    The apparatus of claim 10, wherein the compressible conductive member  
2     is a crushable washer.

1           12.    The apparatus of claim 1, wherein the second conductive member  
2     comprises a compressibly compliant portion urging contact between the second  
3     conductive member and the first circuit board second conductive surface and the second  
4     circuit board second conductive surface.

1           13.    The apparatus of claim 12, wherein the compressibly compliant portion is  
2     a spring portion.

1           14.    The apparatus of claim 12, wherein the spring portion is disposed at the  
2     first end and compressibly contacts the second circuit board second conductive surface.

1           15.    The apparatus of claim 12, wherein the spring portion is disposed at the  
2     second end and compressibly contacts the first circuit board second conductive surface.

1           16.    The apparatus of claim 13, wherein the spring portion is disposed at the  
2 first end or the second end.

1           17.    The apparatus of claim 1, further comprising a compressibly compliant  
2 member electrically coupled to the second conductive member, the compressibly  
3 compliant member urging contact between the second conductive member and the first  
4 circuit board second conductive surface and the second circuit board conductive surface.

1           18.    The apparatus of claim 1, wherein further comprising:  
2           a first contact, electrically coupled to the second circuit board second conductive  
3 surface, the first contact slidably contacting an outer surface of the second conductive  
4 member; and  
5           a second contact, electrically coupled to the second circuit board first conductive  
6 surface, the second contact slidably contacting an inner surface of the first conductive  
7 member.

1           19.    The apparatus of claim 18, further comprising an insulating member  
2 disposed between a portion of the first contact adjacent the second conductive member  
3 second surface.

1           20.    The apparatus of claim 18, wherein the first contact and the second contact  
2 are spring members.

1           21.    The apparatus of claim 1, wherein a conductive member selected from a  
2 group comprising the first conductive member and the second conductive member is  
3 electrically coupled to the first circuit board first circuit board first conductive surface by  
4 a receptive spring assembly.

1           22.    The apparatus of claim 21, wherein the receptive spring/assembly  
2 comprises:

3           a blade portion; and  
4           a spring portion, for slidably contacting the blade portion

1           23.    The apparatus of claim 22, wherein the spring portion is disposed at an end  
2 selected from the first and second end of the selected conductive member.

1           24.    The apparatus of claim 23, wherein the spring portion is a female receptive  
2 spring portion forming a cavity shaped to slidably accept the blade portion.

1           25.    The apparatus of claim 1, wherein:  
2           the first circuit board comprises a first conductive plane; and  
3           the first conductive plane is electrically coupled to the first circuit board first  
4 conductive surface by at least one first electrical path perpendicular to the first conductive  
5 plane.

1           26.    The apparatus of claim 25, wherein the at least one first electrical path  
2 comprises a first plurality of plated through holes.

1           27.    The apparatus of claim 26, wherein the first plurality of plated through  
2 holes are disposed about a first periphery of an aperture disposed through the first circuit  
3 board.

1           28.    The apparatus of claim 25, wherein:  
2           the first circuit board further comprises a second conductive plane electrically  
3 insulated from the first conductive plane; and  
4           the second conductive plane is electrically coupled to the first circuit board second  
5 conductive surface by at least one second electrical path perpendicular to the first  
6 conductive plane.

1 29. The apparatus of claim 28, wherein the at least one second electrical path  
2 comprises a second plurality of plated through holes.

1 30. The apparatus of claim 29, wherein the second plurality of plated through  
2 holes are disposed about a second periphery of the aperture.

1 31. The apparatus of claim 1, wherein the first conductive member and the  
2 second conductive member are arranged to provide at least circuit characteristic selected  
3 from the group comprising inductance and capacitance so as to achieve a desired circuit  
4 characteristic in combination with circuit elements on the first circuit board or the second  
5 circuit board.

1 32. The apparatus of claim 1, further comprising one or more bypass  
2 capacitive elements disposed on the first circuit board or the second circuit board and in  
3 electrical communication with the first or the second conductive member.

1 33. The apparatus of claim 1, wherein the second conductive member is  
2 formed from a conductive electromagnetic interference frame.

1 34. The apparatus of claim 1, further comprising a conductive electromagnetic  
2 interference frame, disposed around the first conductive member and the second  
3 conductive member.

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